Title (en)

QUANTUM ERROR CORRECTION

Title (de)

QUANTENFEHLERKORREKTUR

Title (fr)

CORRECTION D'ERREUR QUANTIQUE

Publication

EP 4232966 A1 20230830 (EN)

Application

EP 21881367 A 20210930

Priority

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- AU 2021901279 A 20210430
- AU 2021051138 W 20210930

Abstract (en)

[origin: WO2022082254A1] This disclosure relates to a quantum processor comprising multiple patches of digital qubits and a quantum bus of digital qubits. The quantum bus is configured to connect the multiple patches of digital qubits and to transmit quantum information constituting long-range interactions between the patches of digital qubits. The quantum processor is controlled by a first method of error correction on each of the patches connected by the bus to reduce a relatively high error rate in the digital qubits to a relatively low error rate of each patch, and by a second method of error correction on the multiple patches to correct the relatively low error rate. The number of patches can be increased to increase the distance of the second method and therefore reduce the final error rate. Due to the quantum bus, the patches can be arranged such that there is sufficient space between them for control circuitry.

IPC 8 full level

G06N 10/00 (2022.01); **H03M 13/29** (2006.01)

CPC (source: AU EP KR US)

G06F 11/085 (2013.01 - AU KR); **G06N 10/20** (2022.01 - EP KR US); **G06N 10/40** (2022.01 - KR US); **G06N 10/70** (2022.01 - AU EP KR US); **H03M 13/29** (2013.01 - AU); **H03M 13/2906** (2013.01 - KR); B82Y 10/00 (2013.01 - KR)

Citation (search report)

See references of WO 2022082254A1

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